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Approach



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Mishaps cost time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness. This magazine's goal is to help make sure that personnel can devote their time and energy to the mission. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous; the time to learn to do a job right is before combat starts.

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Front cover: A T-45C Goshawk assigned to training Air Wing VT-1 launches from a flight deck of USS *Theodore Roosevelt* (CVN 71). Photo by MCSN Jennifer Fournier. Modified.

Back cover: Photo composite by Allan Amen.

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By LT Robert Crosby and AWR2 Matthew Ballard
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Mishap Binning

By Kimball Thompson

WE PERIODICALLY DO a simple analysis called “mishap binning” to trend material failures, overall human factors and aircrew human factors. We place mishaps in four characterizations:

- material failure,
- facilities human factors,
- maintenance human factors, and
- aircrew human factors.

A material failure must be so extreme that no aircrew intervention can prevent the mishap. A facilities human factors mishap is where personnel at a ship, air station, OLF or some other practice location are found causal. A maintenance human factors mishap is a maintenance malpractice incident where aircrew intervention cannot prevent the mishap during a flight. Aircrew human factors mishaps are incidents where there was nothing wrong with the aircraft and, to put it bluntly, the aircrew “gooned it”.

We also have a bin where we place flight mishaps that had an initial aircraft component failure, because of maintenance malpractice or a material failure that is followed by an aircrew causal factor or factors. If the aircrew had followed NATOPS, SOPs, or exercised good airmanship, the mishap would have been prevented. In the final analysis these are included with the aircrew human factors bin. It is probably no surprise that we see 80% or more of the mishaps involve human factors causal factors and 60–65% involve aircrew human factors.

Approach articles usually describe incidents where the aircrew survives to tell their story. In these success stories, the involved aircrew did follow NATOPS, SOPs, and exercised good airmanship (including ORM and CRM). As you read about these near-mishaps, consider a less fortunate outcome and conduct your own binning drill. More importantly, consider your own flying. Have you done everything to ensure you are not going to be binned in the “gooned-it” category?

KIMBALL THOMPSON IS THE DEPUTY DIRECTOR, AVIATION SAFETY PROGRAMS AND A RETIRED CDR FROM THE HS COMMUNITY.

Bravo Zulus Joining the Endangered Species List?

FANS OF FORMAL KUDOS will note the absence of our long-time feature, the Bravo Zulu section. We haven't taken a dislike to it. We remain firm believers in catching people doing something right, especially in the world of mishap prevention, where most of the headlines involve the results of people doing something wrong. The Bravo Zulu section remains alive and well, assuming that you guys get hot and start sending some in. We aren't sure about the cause of the current dearth. Hard to believe that Navy and Marine Corps aviators have suddenly taken big steps backward in terms of their professional skills, and that everyone is now just doing the minimum.



All the Signs Were There

BY LCDR BRIAN PENNELL

The E-6B was designed in the 1950s during the Buddy Holly era and built in 1990s Seattle where Nirvana was blowing up the music scene. A lot of the systems are robust “oldies but goodies” – very reliable but not the most modern design.

One of those things is the flight-control system. Most modern airframes enjoy a fly-by-wire system. In the E-6, we enjoy a “fly by cable” system incorporating unboosted ailerons and elevators that use pulleys, cables, control tabs, and balance bays. It has worked for 40 years, so why change it?

Our crew of 14 was on a three-week detachment. While looking at the aircraft discrepancy book for our aircraft, my flight engineer and I noticed a few gripes about the autopilot having difficulty trimming the horizontal stabilizer. Throughout the first week of the trip, we noticed this problem. We thought it might have been caused by a malfunctioning electric trim motor or something else not related to the nuts and bolts of our flight-control system. We continued to work with it by manually trimming the aircraft with the autopilot off and then using the autopilot only for cruise flight.

A couple of weeks into the detachment, we were scheduled to do a mission where we would perform our orbit maneuver. For the uninitiated, this is where we take a Boeing 707 and extend a 5-mile-long trailing wire behind us. Then we fly in a tight turn, very close to stall, in order to get the wire to “drop in” below us. This is normally done with the autopilot engaged, because the maneuver requires a lot of pitch trim input. When we tried to use the autopilot to perform the orbit, it would not sequence into the proper mode. We elected to perform a manual orbit and figure it out later.

During the remainder of the flight, our flight engineer decided that he had seen enough. He sus-

pected that something bigger was going on and came up with a game plan to troubleshoot the problem. He inspected the components of the stabilizer trim system in the pressurized portion of the aircraft, but nothing was amiss. After we landed and during postflight, he was able to inspect the unpressurized portion of the tail where much of the stabilizer trim system is located. He immediately saw the problem: the control cable that connects the horizontal stabilizer to the components in the front of the aircraft was frayed almost to the point of breaking. This caused the frayed portion to get stuck in a pulley, which the autopilot in low torque mode was unable to overcome. Had this problem gone on much longer, the cable would have broken, damaging components and putting the aircraft in a potentially unsafe situation.

Repairs were made in the next few days. After an FCF, the aircraft was returned to an up status. We examined our maintenance records in an attempt to determine when and how this could have been prevented. The section of cable in question was regularly inspected as part of aircraft phase maintenance, but was in a difficult to access location and it had been a long time since the previous inspection interval. The damage had taken place since that last inspection.

This is a perfect example of how a long-standing gripe that seems benign can turn nasty. We all had recognized the early signs of this problem, but it was never severe enough to grab our attention. The flight engineer cared enough to troubleshoot the problem when the hairs on the back of his neck started standing up. Had he not done that, this article could have been much juicier, about an aircrew dealing with a jammed stabilizer or binding controls. 🦅

LCDR BRIAN PENNELL IS THE TRAINING OFFICER WITH VQ-4.

Out For a Dip

Life, Liberty, and the Pursuit of Submarines

BY LT ROBERT CROSBY AND AWR2 MATTHEW BALLARD

It was the second launch of the night. Our crew of three had already shut down once after a frustrating three-hour flight without gaining contact on the OPFOR submarine participating in Carrier Strike Group Two's COMPTUEX. When the USS *Theodore Roosevelt* (CVN 71), part of our strike group, received possible contacts, we got the call to launch the alert anti-submarine-warfare (ASW) helicopter and give it another go. It was now 2:30 a.m. and our NVGs strained to provide us a picture. The only illumination to be found was from the position lights of passing ships.

When we got to the position of last known contact on the sub, we fired off sonobuoys into a search pattern. After finding what could be our target, we decided to unleash the MH-60 Romeo's dipping sonar. With the help of one of our squadron's other helicopters, which had just arrived on the scene, we began to carry out a simulated attack.

We made an automatic approach to a 70-foot hover into the wind to a position we believed would give us an excellent chance of detecting the target once we lowered our sonar transducer. We were in "the dip," which can be especially challenging at night without visual cues for positioning and drift.

Five minutes into our dip, we received strong contact that correlated to the area where we believed

the submarine was operating. This hit immediately grabbed the attention of all three of us; unfortunately this included the pilot at the controls, who was our helicopter aircraft commander (HAC). The HAC lost focus on flying as she watched over my shoulder while we refined the track. This drop of scan led to an undetected aft drift and yaw out of the windline.

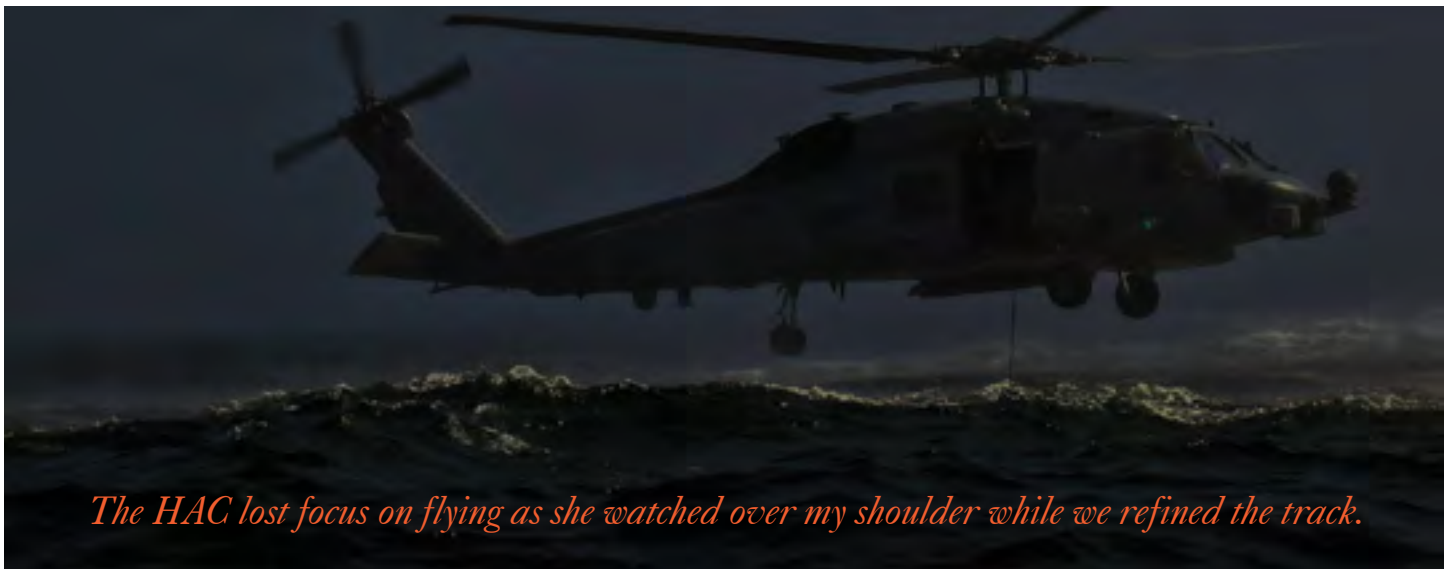
AWR2 Ballard was the first to notice our situation. The system protested with multiple advisories due to the fact that we were no longer hovering directly over the transducer. He asked from the back, "Is everything all right up there?"

I turned my attention to the instruments and saw we were rapidly departing from the proper parameters of a normal dip. The aircraft was about 20 degrees out

of the wind line and had developed an aft drift of five knots. The HAC assured us that she had control of the situation. She tried to eliminate the drift and turn the nose back into the wind, but her inputs were not sufficient to stop the developing disaster. Suddenly, our automatic flight control system (AFCS) kicked off, which disabled our altitude hold. We began to rapidly descend toward the water. As my low-altitude warning system began to chime along with AWR2 Ballard's calls for power, I pulled up on the collective with the HAC.

should always heed your instruments. In a multi-piloted aircraft like the MH-60R, one of the pilots should always be focused on flying. There is a huge temptation to focus on the tactical scenario at the expense of maintaining proper control of the aircraft. This temptation needs to be recognized and addressed thoroughly in the mission brief.

The next lesson was in the critical CRM skill of assertiveness. I should have demanded control of the aircraft at the first signs of the HAC's vertigo, even if




We arrested our descent at 8 feet over the water.

We rapidly climbed to 300 feet, well above our prescribed dipping altitude of 70 feet. I had to push down on the collective to keep the aircraft from exceeding engine and transmission limits. We momentarily stabilized with our transducer barely in the water. I wasn't even sure if it was still attached to the cable. I quickly reset our AFCS and enabled altitude hold during our momentary respite. However, the HAC began another aft drift, probably from unrecognized vertigo. With the insistence of AWR2 Ballard, I took controls and stabilized the aircraft. We coordinated to raise our transducer, depart our hover, and return to the carrier, a little shaken.

The first lesson is that during night operations, you

she was not willing to give up control right away. Our AWR2 demonstrated excellent CRM when he alerted us to the problem and added his voice in calling for a swap in controls. If our drift had been caught earlier, we never would have lost our AFCS and would have avoided our close call 8 feet over the water.

CRM is preached during all phases of training and is permanently burned into our memory. On nights like that of our incident, we look back and realize the importance of these proven techniques. Despite our initial CRM breakdowns, our AWR's assertiveness allowed us to recognize our descent and bring the aircraft back safely. 

LT CROSBY AND AWR2 BALLARD FLY WITH HSM-70.



TRAP-CAT-SNAP!

BY LT MICHAEL EASON

We were onboard the USS *Harry S. Truman* (CVN 75). I was a TAD pilot with VAW-126 to get carrier flying experience as part of my aircrew training syllabus. My crew and I were scheduled on this February night for a trap-cat-trap evolution to complete my carrier re-qualification.

We launched on a Case I departure during the day and flew a 2.5-hour double-cycle, providing airborne early warning for the Carrier Strike Group.

We returned to the ship and established ourselves in the marshal stack to wait for approach time. At our designated time, we hit our push point and flew a CV-1 approach. This was my first trap of the evening and my first night trap in about eight months. After the trap, we

taxied clear and ran the takeoff checks en route to cat 1 to launch back into the Case III pattern for my second and final trap of the night.

We taxied to the catapult. Once we were hooked up, the bow safety petty officer gave me the tension signal. I ran the power up and simultaneously stowed the nosewheel steering handle. We went screaming down the catapult on what seemed like an uneventful launch, except for a bump I felt near the end of the cat stroke. It coincided with the usual violence at the end of a catapult stroke. At the time, the bump appeared normal. It was my first night cat shot since June of the previous year, and it was possible that I was simply not used to the normal sensations during an event as extreme as a night catapult shot.

Once airborne, I raised the landing gear and flaps with no problems, as we climbed to 1,200 feet. We leveled off and turned to the downwind heading. Five miles aft of the ship, approach control gave us a turn to ship's final bearing. We dropped the landing gear and completed the landing checklist, intercepted final bearing, and flew approach needles down to the ball call. At three-quarters of a mile, the copilot called the ball and I flew an uneventful pass, trapping slightly left of centerline, on catching the 2-wire. We had no issues during the landing rollout as I applied the standard Hawkeye boot of full right rudder to keep us tracking down the landing area.

We came to a stop. I raised the power levers to the top of the flight-idle gate to retard the power back into the beta range, which allows our aircraft to go into reverse. Both the carrier aircraft plane commander (CAPC) and I concurred that we had good beta-light indications on our dashboard display. On the taxi director's signal, I placed my hand on the nosewheel-steering handle and gave a good shot of reverse thrust to back us out of the wire.

Immediately upon applying reverse thrust, the nose of the aircraft swerved to the left. I tried unsuccessfully to counter with nosewheel steering while simultaneously coming out of reverse. At the same time, the CAPC in the right seat applied the brakes to stop us in our tracks. This was our first solid indication in the cockpit that something had gone wrong. The taxi director tried taxiing us forward a bit to straighten our nosewheel and then gave us the reverse signal again. We continued to swerve left despite nosewheel steering inputs.


The CAPC and I got on the brakes and stopped the aircraft again. My initial fear was that I had somehow blown a tire on landing. As we tried to assess our situation inside the aircraft, the Air Boss came up over the radio and asked if we were having trouble steering. The CAPC in the right seat responded in the affirmative, requested to shut down the engines, and asked to have the aircraft towed out of the landing area. With more aircraft still needing to recover behind us, the taxi director signaled for us to be chocked and chained. He then passed us off to a plane captain to fold the wings, shut down both engines, and disembark the rest of the crew as quickly as possible.

The flight-deck crew hooked up a tow bar and tractor to the aircraft. The CAPC and I remained in the cockpit to ride the brakes. As soon as the crew cleared the area and the tractor was hooked up, they removed the chocks and towed us forward to be parked. Once we were chocked and chained for the last time, we disembarked and went forward to take a look. The nosewheel-steering linkage had been sheared off on the right hand side and was hanging loose. Hydraulic fluid was spraying from somewhere around the linkage, and our launch bar was bent to the left.

We went downstairs to debrief in the ready room. We then reported to medical for a postflight physical examination in anticipation of the possibility that this would be considered a mishap.

We soon learned that a catapult inspection cover plate at the end of cat 1 was missing, and another inspection cover plate in close proximity was short a number of required bolts. It seems that a portion of those deck plates protruded upward above the otherwise flush surface of the flight deck. At the end of our cat stroke, just before rotating to a climb attitude, our tow link struck this deck plate at about 130 knots. The impact likely caused significant damage to our nosegear assembly. The damage was not significant enough, however, to impede our ability to raise and lower the landing gear, or to affect a safe recovery. Had our nosegear buckled or been more severely damaged, the situation may not have been as benign.

I learned to trust what I'm feeling in the aircraft. Even though I hadn't experienced a night catapult shot in quite a while, I should have voiced my concern to the crew after feeling the unexpected bump at the end of the stroke. Had I done so, it's possible that we may have expected a landing-gear issue and gotten a visual inspection from the landing signals officers prior to recovery. The ship would have likely still wanted us to come aboard, but we could have recovered last to not disrupt the recovery for the rest of the air wing. They could have removed some arresting wires to minimize the risk of further damaging the nosegear.

At least we recognized our issue quickly after landing. We wasted no time in disembarking the crew and getting the aircraft towed clear of the landing area. 

LT EASON FLEW WITH VAW 126.

Hawkeye

Afterburners

BY LCDR OSCAR HAU

During the summer of 2012, VX-1 (my squadron), along with additional aircrew and maintenance personnel from VAW-120 (assigned as trusted agents), were midway through our Initial Operational Testing and Evaluation (IOT&E) for the new E-2D Advanced Hawkeye. We were on detachment to NAS Fallon to participate in Air Wing Fallon as observers supporting operational testing and evaluation of our four aircraft.

One weekend we had a cross-country flight to NAS Whidbey Island. We'd get to evaluate the mobility and logistical supportability of our aircraft at unfamiliar airfields, using different types of support equipment. The side benefit was a weekend in the beautiful Pacific Northwest.

I would sign for the aircraft (CAPC). Our crew included a senior lieutenant (CAPC qualified), a senior lieutenant commander (mission commander), and two other senior lieutenants (both mission commander qualified). Everyone had significant experience operating with the E-2D Advanced Hawkeye.

With our preflight planning complete, we conducted a NATOPS brief, manned-up and flew an uneventful leg to NAS Whidbey. We shut down on the transient line and arranged support equipment and fuel for the flight back to NAS Fallon.

After a great weekend enjoying the Seattle area, it was time to return to the high desert of Fallon. Our

operational testing requires flying a set amount of hours to evaluate system performance and degradation as increased time is put on the aircraft and its weapon system. Our return flight was planned so that we would not fly direct to NAS Fallon but drop in to other airfields for pattern work and additional flight time.

We briefed, filed IFR to McChord (KTCM) for three touch-and-goes, then VFR with flight following to South Lake Tahoe (KTVL) for a touch-and-go, and then direct to NAS Fallon. The weather office at NAS Whidbey Island Base Ops provided the weather brief for our flight: no significant weather. We enjoyed VFR conditions the entire route of flight.

As we got closer to South Lake Tahoe, we tuned up the automated surface observing system (ASOS), which reported winds from 240 at 10 knots, temperature 75 F and pressure altitude of 8,100 feet. Field elevation is 6,269 feet and runway length is 8,541 by 100 feet. We completed our approach checks and armed the automatic power reserve (APR) because of the high elevation of South Lake Tahoe airport. According to the E-2D NATOPS approach and landing checklist, APR should be turned off. After much discussion by the entire IOT&E team, we decided to deviate from NATOPS and turn it on during takeoffs, approaches and landings, because of the high temperatures and elevations of the airfields.



APR is a new system introduced in the E-2D that allows an operating engine to provide more power in the event one engine fails. According to E-2D NATOPS, APR is “an emergency engine mode designed to increase available shaft horsepower (SHP) on the operating engine above the normal maximum of 5,100 SHP when certain conditions have been met. In APR mode, available SHP is dependent on outside ambient conditions and operating engine efficiency.”

APR provides single-engine climb-away capability during hot-weather conditions when that capability might not have otherwise been available because of the higher gross weight of the E-2D. We had convinced ourselves that we might also want that capability should we lose an engine during an approach and need the ability to wave off. Almost everyone assumed that one of the requirements for APR to activate was for one engine to actually fail.

We discovered that is not the case. APR activation requires three conditions to be met (the same logic is used in the auto-feather system):

1. APR switch is in the armed position.
2. The power lever is placed greater than 63.8 degrees PLA.
3. The opposite engine is producing less than 500 pounds of thrust. Once all three of these conditions are met, APR is activated on the operating engine.

As we approached the airport, we reported our position on the common traffic advisory frequency (CTAF) for South Lake Tahoe and requested traffic advisories. A small multi-engine aircraft reported approaching left downwind for a full-stop landing. An Army Blackhawk helicopter, who reported operating in the vicinity, would also be transiting near the airfield at a low altitude. We established visual contact with the Blackhawk as we approached the downwind and noted that after our touch-and-go, the Blackhawk would be close to our flight path. We would need to compensate for him.

The Blackhawk reported crossing the departure end of our runway at 200 feet right before our touch-and-go.


While executing the “go” portion of our touch-and-go at South Lake Tahoe, the power levers were placed to max power before either engine had produced greater than 500 pounds of thrust. This caused both engines to activate APR. We didn’t notice.

We decided to remain below the Blackhawk’s altitude until we could reestablish visual contact. Once we got to a safe altitude, I brought the power levers back but still hadn’t regained visual contact. This went on for an entire minute. When we finally got eyes on him, I reapplied full power for our initial climb and started our turn to NAS Fallon.

We didn’t notice anything out of the ordinary with the engines: no out-of-limits engine indications (red or yellow gauges), no abnormal engine-audible noises, no caution or warning history in the CDUs. We eventually saw a yellow (caution) APR light on top of the SHP indicators. That’s when we started discussing the possibility that we had just initiated the first APR event in the history of the E-2D Advanced Hawkeye.

DUE TO LACK OF KNOWLEDGE and training on APR, we weren’t sure what had happened, but we knew it wasn’t normal. After making a straight-in landing to NAS Fallon, we discussed what we had experienced with the mechs. We proceeded to download the engine data for analysis in the hangar to confirm APR activation during our touch-and-go in South Lake Tahoe.

The cause of this event was the rapid power-lever movements. According to E-2D NATOPS, there is a warning for the auto-feather system which is the same logic used on APR. The warning states, “With the auto feather system armed, rapid power lever movement from near flight idle to above the auto feather arm point (63.8 degrees PLA) in less than approximately one second may cause engine RPM decay as low as 93 percent rpm.”

Eventually, both engines had to be removed and overhauled because of overheating of the turbine section. Future APR events will require an engine change: a Class B mishap. 

LCDR HAU FLIES WITH VAW-117.



The Swimmer Just Fell

BY LT REBEKAH CRANOR

That's what I heard over ICS, along with shouts and swear words from the back, then a radio call from the other aircraft a few seconds later; "I think someone fell from your aircraft."

You don't want to hear either of these things while doing SAR jumps.

The flight was a dual-ship SAR jump in the Gulf of Oman. The skipper was in the lead aircraft, and the squadron safety officer and I were Dash 2. Part of our deliberate ORM for the event was putting the skipper and the safety O as the HACs.

The other copilot and I spoke with the HACs and formulated a simple plan. We would rotate through swimmers and hoist operators while conducting simultaneous jumps with the two aircraft a safe distance away from each other.

On the day of the jumps, we completed a NATOPS and ORM brief, which included discussing the order of events and known hazards. We headed out dual-ship to our assigned area, cleared the area, and set up to start the jumps. I sat right seat, the safety officer sat left seat, and we had six crewmen in the cabin.

The first few evolutions went smoothly. Both aircraft were jumping at the same time; we were within sight of each other, but a safe distance away. The

dedicated swimmers and hoist operators were rotating as assigned.

We had just jumped our five swimmers and elevated to a 70-foot hover. The hoist operator lowered the rescue hoist. The swimmer hooked up the first survivor, who happened to be our HM1 (a SAR medical technician). The hoist operator raised him, brought him into the cabin, and then lowered the hook for the second survivor. I didn't think anything of it at the time, but it took a long time for the swimmer to hook up the second survivor. After they were hooked up, we saw a thumbs-up from the swimmer. Everything looked normal from above.

The other aircraft had its FLIR on our swimmer and survivor. Later analysis of this video would reveal that the swimmer appeared to be in the wrong position coming up from the water, but we didn't notice anything. The swimmer and survivor were at the door when I heard shouts coming from the back of the aircraft. The hoist operator quickly said over ICS that the swimmer had fallen. The radio call from the other aircraft echoed the same. The left seat pilot moved our FLIR to the swimmer in the water and confirmed that he was face down in the water and wasn't moving.

It was surreal. I focused on keeping a steady hover and communicating with the hoist operator. The two swimmers still in the water swam towards our injured

The swimmer and survivor were at the door when I heard shouts coming from the back of the aircraft. The hoist operator quickly said over ICS that the swimmer had fallen.

swimmer. Our hoist operator was an AWS3, so he traded spots with the HM1, who got ready to go down the hoist as the dedicated SAR swimmer. He threw on the hoist operator's helmet so he could get ready to lower the swimmer. However, he had just gotten out of the water, so water from his wet head intruded into the helmet microphone and shorted out the ICS; we had now lost ICS with our hoist operator.

He yelled, got our attention, and we gave him crew hover. He moved the aircraft over to the right and lowered our new dedicated swimmer down. The left seat pilot had been steadily providing updates on the swimmer who fell. The swimmers in the water moved him to his back and were holding him steady. We eventually could tell that he had regained consciousness.

The two HACs were communicating between both aircraft and back to the ship. After what seemed like an eternity, the swimmer gave us the signal for the rescue basket, which was lowered. As they situated the injured swimmer into the rescue basket, the HAC coordinated with the other aircraft to have them pick up our remaining swimmers. We wanted to depart as soon as the injured swimmer was in our aircraft and secured.

We saw the pickup signal. The hoist operator brought the injured swimmer into the basket, gave me back control up front, and secured the cabin. After the cabin was secured and ready for flight, we departed and busted back to the carrier. The tower cleared us to land and we charlie'd on the spot. Between lost ICS and HM1 taking care of the survivor, the normal flow of communication from the back calling us into the spot wasn't there. That break in routine definitely threw me; I misjudged the height above deck and planted the aircraft a bit too firmly on the deck. Medical personnel moved the injured swimmer onto a stretcher and took him to medical.

The rest of the day was a blur. The carrier was in the middle of cyclic ops, so we had minimal time on deck. The HM1 went to medical with the injured swimmer, a new crew chief joined our flight crew, and we went back out to finish our plane guard line. Eventually, we made our way down to medical to fill out our own paperwork and have labs taken, as the situation was a possible


mishap. The senior medical officer did the best he could to keep us updated on the injured swimmer as we waited in medical. After several hours, we were able to see our swimmer before he was transported to Bahrain for further evaluation and treatment. He was back on the ship a few days later with only minor injuries.

THE FLIGHT HAD STARTED OUT as one of the coolest flights I had done to date, being still new to my first squadron and early into the deployment. Yet it turned into the most nerve-racking flight I've ever experienced. As I was walking to medical after dropping off my gear, I overheard the skipper telling CAG that this was exactly why we needed to keep practicing the basics.

I took away several important lessons from this event. The first was an affirmation of how important it is to brief the flight and then fly that brief. For example, our "lost ICS" procedure worked flawlessly despite the stress of a dynamic emergency.

Many of our junior pilots had previously conducted "hangar flying" discussions with our aircrew about scenarios involving problems with the swimmer. In this case, there were other swimmers who could take care of our injured swimmer, but what would have happened if he was face down in the water after falling and the only other aircrew member was the hoist operator?

In the end, the AMB concluded that our swimmer failed to attach the rescue hook to his Tri-SAR harness; he just held onto the simulated survivor as they were being hoisted from the water. Although the swimmer had performed the hoisting procedure many times throughout his career, he didn't hook up. Why? Because he didn't want to be seen as a weak link, he violated a published procedure because he felt a perceived pressure to execute at a faster pace than the pace at which he was comfortable and proficient.

Aviators and aircrew have to be cautious about an over-reliance on past experience. Currency does not equal proficiency, and a training event is not valuable at the expense of a life. 

LT CRANOR FLIES WITH HSC-8.

Who Belongs in an F/A-18? Not the Good Idea Fairy!

BY LT PATRICK STEWART

It was a December morning, and I was scheduled for a combat flight with a fellow junior officer (JO). The weather in country was briefed to be beautiful and we were very excited to go flying, even if it meant a 5:30 a.m. brief for a 8:00 a.m. launch. We had been supporting Operation Enduring Freedom (OEF) for four months, and everyone was getting comfortable flying in country and around the boat.

The brief was standard at this point, but startup presented a few issues. My flight lead had to jump in the spare and then had trouble receiving GPS signals in his jet, a critical system when carrying all GPS-guided weapons. I launched on time, quickly went through my airborne checks and told my flight lead that all my systems were working.

He was still on deck troubleshooting his GPS. The Air Boss was getting close to launching the spare from another squadron in his place. Earlier on this cruise, we'd noticed this problem: the jet would pick up GPS once airborne and work just fine. We discussed this option, and we talked about how we didn't want the other squadron to fill our OEF line.

My flight lead soon was airborne. As predicted, his jet picked up a good GPS signal and his weapons downloaded normally. We proceeded up the boulevard toward our first tanker.

In the midst of all the startup commotion and my hasty airborne checks, I didn't notice a Built In Test (BIT) advisory that was present on my left digital data indicator (DDI). We were about 100 miles north of the ship at 23,500 feet on the boulevard when I discovered that I had a Stores Management Set (SMS) degrade. I knew I wouldn't be able to release any ordnance with this condition, and I felt like we were too far north to launch the spare. I also knew that there wasn't a push button to BIT the SMS airborne.

I wanted to make the most of our rare dual-JO OEF go, and I was tired of hearing (from my own ready room) how JOs were bad at troubleshooting. I was feeling comfortable in the jet at this point of cruise – probably

too comfortable. In a last-ditch effort at troubleshooting, I elected to cycle power to the generators one at a time. I hoped this ploy would trick the SMS into a BIT and I could take a fully functional jet into country. Multiple times in flight school I had heard the phrase “no fast hands in the cockpit” in reference to handling emergencies. It perfectly applied to this situation as well. I cycled power to the left generator (L GEN) first, and then quickly cycled power to the right generator (R GEN). I moved too quickly and failed to realize that when I returned the L GEN switch to on, the generator had failed. I had induced a dual generator failure.

As the jet powered down, time seemed to stand still. To my relief, the R GEN came right back on and key systems started to reboot. While the jet was powering back up, I let my flight lead know that I had a problem and I needed to abort on the boulevard.

Approximately one minute had elapsed since I induced my electrical problem, and I began to notice a pounding in my chest, tingling in my fingers, and a shortness of breath. I discovered that I had been flying around at 22,000 feet cabin altitude since the problem began. My oxygen mask had been off because I'd



been eating and drinking when I started my misguided troubleshooting. I quickly put on my mask and pulled the emergency oxygen green ring. I secured my oxygen flow knob and began a descent from 23,500 feet while turning south to head back to the ship.

Initially I only descended to the bottom of the boulevard altitude structure since I was still over Pakistan and concerned about international airspace. During the turn and descent, my flight lead noticed that my speech was slurred so he kept a running conversation going with me. He confirmed that I'd done the appropriate emergency procedures and pulled the green ring. Once the emergency oxygen started to clear my thinking, I changed my squawk to 7700 and descended to below 10,000 feet cabin altitude.

This was the first time that I noticed my L GEN had failed and I also had a GEN TIE caution. Continu-

noticed it then, I probably wouldn't have decided to start cycling generators with so many other options still available.

Pride played a factor here as well, since I didn't want the airborne spare to fill for me. Once on the boulevard, my misguided troubleshooting should've never crossed my mind. NATOPS specifically says "cycling of generators airborne in an attempt to regain failed/degraded systems may result in loss of additional systems." My comfort in the jet was overconfidence. I didn't thoroughly think through the systems I was shutting down.

"No fast hands in the cockpit" makes more sense than ever to me. Had I taken the time to deliberately execute my ill-advised troubleshooting technique, I would have noticed that the L GEN had failed and would not have shut down the R GEN at the same time.

Initially, there was a lack of Crew Resource Man-



ing with my stellar decision-making, I elected to reset the GEN TIE caution airborne. This decision worked in my favor. At this point, the R GEN was supporting the full electrical load and the jet performed normally. I also tried to reset the L GEN to regain its functionality, but it never reset.

My flight lead had coordinated for the recovery tanker to pick me up and watch after me on the way back to the ship. After seven minutes, the emergency oxygen ran out, and all my hypoxia symptoms were gone. I received gas from the recovery tanker and recovered via the dreaded day straight-in approach. The previously mentioned spare from another squadron ended up meeting my flight lead on the first tanker in country. Their mission was uneventful.

After I landed, I was immediately escorted down to medical and found to be OK, although I was feeling nauseated and sluggish, in addition to feeling stupid for creating the emergency.

Post-flight data showed that my SMS degraded right after takeoff. While talking to my flight lead about his GPS, I spent 15 minutes overhead the ship waiting and should have noticed this problem. Had I

agement (CRM), in that I did not notify my flight lead of the degraded SMS. Once I had induced the emergency, however, my flight lead used excellent CRM to keep me talking and drive me around while I was experiencing hypoxia. It also proved to me that all the reduced oxygen breathing device trainers I've been forced to participate in were very worthwhile as I immediately noticed my hypoxic symptoms.

The day's events taught me two very important lessons that I will carry with me throughout my aviation career. First: Learn NATOPS! I thought I had a good understanding of the F/A-18C systems but still decided to cycle generators. Cycling generators one at a time will not remove power to critical systems. The F/A-18 is built to transfer electrical loads so if one generator fails, the other generator automatically picks up the extra load. Second: Tell your flight lead when a mission-essential system is degraded prior to troubleshooting. There is a wealth of knowledge in the other jet that could stop you from doing something stupid. ✈️

LT PATRICK STEWARTFLIES WITH VFA-37.

OW! MY NECK!

BY CDR THOMAS E. SATHER MSC, USN, CASP AND GREG LILLIE, DC, MS

Are you one of the many who suffer from neck and upper back pain? If you are, you are not alone. Neck pain among aviators is frequent and is second only to low back pain in musculoskeletal related disorders.

Do you work out regularly, yet seem to always have pain? Have you ever stood in front of a mirror and wondered why one shoulder is higher than the other and your head seems to be sitting crooked on your neck? Do you ever wonder how an active, healthy, physically fit pilot gets in such a condition?

“As the tree is bent, so it grows” may describe your situation. The more time a body spends in a hunched, anterior attitude, soft tissue changes occur, which tend to reinforce this posture. Over the past half-century, flying times have increased dramatically. Other contributing factors to these changes are well-known. Some of the more common include trauma,

vibration, and helmet-mounted vision enhancement devices.

Once out of the aircraft, what do you do? Probably head to a desk and sit at the computer for a couple of hours or more, most of the time sitting in a slouched, rolled shoulder attitude. Couple these with psychosocial factors, as well as individual risk factors, and one soon realizes neck, upper back, and even shoulder pain has lots of factors.

You work out. You stretch. You see a massage therapist. Yet nothing you do seems to make a lasting difference. It is time to address your situation from a different angle. Current research is leading us to facilitate change by having a primary goal of retraining the muscles that control our movement patterns and posture. This requires a much different approach than traditional strength and endurance training.

Initially, let's look at some of the reasons why you may have neck pain, yet your co-worker may not. The precise origins of pain may vary widely. Neck pain can result from one specific acute traumatic event, or an accumulation of chronic insults to the spine



and surrounding structures. Cumulative loading of the spine is influenced by factors such as posture, repetition, duration, and force. The exact load that can be tolerated varies between individuals.

Injury occurs when cumulative loading exceeds the rate of repair of biological tissues. This results in tissue failure, leading to pain and possible degeneration or herniation of discs, abnormal vertebra and joint degeneration or arthritis, and sprain/strain injury to muscles, ligaments, and tendons. The earlier these conditions are detected, the better chance there is of recovery. Outside the flying community, neck and back pain are among the leading conditions causing people to seek medical care. Yet aviators rarely make appointments for treatment of neck and upper back conditions.

DISTRACTION DUE TO ILLNESS or injury is considered a precondition to mishaps. In a recent survey, more than 40% of aviators described their pain as moderately distracting, with 34% reporting the pain affecting their situational awareness (SA). When asked to consider each other, 43% of pilots stated that their copilot's SA was limited by pain, yet only 34% admitted that their own SA was compromised. This may illustrate the mindset of aviators, reflecting the belief that they can handle anything, even though they recognize it influencing their copilot.

This attitude is exaggerated when pilots consider seeking treatment. Of the pilots surveyed, more than 80 percent said they would not see a flight surgeon unless their pain was mildly severe (4 on a scale of 1 to 5) or greater. What was the main reason given for not seeking care? They were worried about being grounded! This creates an unfortunate circumstance where pilots are pushing themselves without treatment, to the detriment of their own SA and increasing preconditions towards a mishap.


SA is critical to the aviator and closely intertwined with performance. Pain, and the fear of causing more pain, has a negative influence on the physical performance of an aviator. For example, the "Check 6" position and other non-neutral postures have been linked to reports of aggravated neck pain. This experience of pain will often cause aviators to develop movement patterns, which they perceive will help them avoid increased or future pain. Behaviors such as this affect the coordina-

tion of muscle movement, which in turn leads to changes of normal neck and shoulder muscle activation. The end result is abnormal muscle responses, contributing to tissue damage and degenerative changes. Ultimately, these behaviors lead to de-conditioning, impaired coordination of muscles, and potential bone and joint degeneration or injury. Perhaps most importantly, anticipation and avoidance of pain may impair an aviator's performance of flight duties.

Muscle fatigue is a major risk factor in the development and occurrence of muscle injuries. When fatigued muscles fail to provide support, structural integrity is lost and injury to other tissues may occur.

Coordination is critical to improving and maintaining motor patterns. Interventions designed to develop muscular endurance and coordination have been shown to be useful in managing the tremendous cumulative load faced by aviators and preventing further injury.

The on-line version (<http://www.public.navy.mil/comnavsafecen/documents/media/approach/2014/Sather-Lillie.docx>) of this article describes and illustrates basic exercises and stretches to help you overcome some of the physical stressors common to aircrew members. The exercises are a starting point, not an end solution. This information is not meant to be used to diagnose a condition, nor treat a specific diagnosis. Attempts to disentangle interrelated causes, then prescribe appropriate treatment, including self-management strategies, can be quite challenging. We urge you to seek the care of a qualified physician in order to rule out any "red flags" or contraindications to these suggestions. Doing so will also lead to better case management throughout your spectrum of care.

Chiropractic and osteopathic physicians typically have the education and training to treat musculoskeletal conditions found in aviators. Medical doctors who have done a fellowship in sports medicine or orthopedics will usually be knowledgeable case managers as well. If deemed appropriate, your primary care manager may consult with a physical therapist to help formulate an appropriate treatment plan. 

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Fuel Dumping Frenzy

BY LCDR VINCENT JAKAWICH

For two weeks, our air wing had worked a flight schedule with Operation Enduring Freedom (OEF) flight briefs at 5:00 a.m. and the last recovery at 9:00 p.m. Today was the first day of a surge operation, and the early brief was at 2:30 a.m. The overall plan was to launch the OEF aircraft, the spares and a few extra for night-currency traps before sunrise. Once the OEF sections reported that they were proceeding on mission, the spares would recover via the case III pattern. My role was the Rhino (F/A-18E/F) airborne spare; I had a full-combat load out.

We briefed and walked. I got comfortable in the cockpit of aircraft 103 while the morning FOD walk-down finished up in the dark. Six Rhinos and at least three Hornets (F/A-18C) needed full-up systems or else I'd proceed to Afghanistan and fill in where needed. After a few minutes, several aircraft were calling for squadron reps. One announced they were jumping in a spare. Thinking I had a good chance of being called to fill in, I began entering system data for one of the struggling birds. Sure enough, I launched, proceeded to medium holding and monitored the situation. Despite my initial speculation, all scheduled sections eventually launched and called to say they were pushing.

I reported to the ship that I was ready to come back aboard. They vectored me into the "conga line." Based on my fuel state, I dumped about 2,000 pounds. This would put me in a comfortable position to either continue vectoring or turn to final while adjusting to



max-trap fuel weight. Once the process was complete, I placed the dump switch to off and started preparing for my morning night trap.

A few seconds later, the master caution and dump-open caution illuminated, along with the standard bells and whistles. It was light enough that I could see the fuel pouring from the vertical stabilizers. I immediately ran the bingo bug well above my current state, cycled the dump switch several times and called for the rep. The bingo caution illuminated and the computer said, "Bingo, bingo," but the hemorrhaging continued uncontrollably. I knew that the system should stop the dumping when the transfer tanks were empty, but that would only leave me with blue-water tank +2 passes from that moment. I needed to land.



I was still up with departure on button 2. I told them my condition and started coordinating with the rep, who took down the data as we discussed the rest of the NATOPS guidance. In the Rhino, the fuel system is mechanized so that you can't get rid of feed-tank fuel (either by dumping or giving to a receiver). The wing tanks only transfer to tank 4 and can't redirect into the feed tanks as the Hornet does. I selected inter-wing inhibit, but this switch only redirected recirculation fuel back to the feed tanks rather than to the wings. I could expect the aircraft to cease dumping with about 5,000 pounds of useable fuel remaining.

Approach switched me to departure on button 17 and vectored me to final with a descent to 1,200 feet. The last final bearing I had interpolated was around 240 degrees.

As I turned to intercept, I heard, "Vector 340."

"Understand 103 cleared to intercept final bearing?" I asked.

"103 vector 340. There's an aircraft directly in front of you, your interval," was the reply.

Another aircraft was having minor fuel issues, and my side number had gotten mixed up in the commotion. I was being vectored for spacing behind another aircraft less than a mile ahead.

"Approach from 103, I am an emergency aircraft. I can't stop dumping fuel. I need to recover now. I need you to move those guys," I said calmly (at least, I think I was calm).

The rep was a close friend. The CATCC team was the same I had worked with for the past eight months, through workups and cruise so far, and I had a great working relationship with them. I was confident they were working the issue. If they asked me to do something else after my request, there would be a good reason (maybe the deck wasn't ready, maybe they wanted to trap me after the other aircraft so fuel wouldn't foul the LA for those behind me).

The controller took immediate action and issued direct, succinct instructions to everyone while turning me to final. In the turn, the transfer tanks emptied and the dumping stopped. The external tank was empty; things were looking promising. I configured for landing and saw the tanker off my right side. My fuel state was just below max trap. I shot a self-contained approach to arrestment with the morning sun illuminating the horizon behind me.

After clearing the de-arm area, the aircraft started dumping on the flight deck. The yellowshirts signaled an immediate shutdown and towed the aircraft to its spot. All I could think of was, "What if I was still airborne?"

SWO breakfast in wardroom 3 that morning was one of the best I've had. 🦅

LCDR JAKAWICH FLIES WITH VFA-31.



Midway and the Black Hole Effect

BY LCDR TROY GRAHAM

It was a standard Fleet Logistics support mission in PACOM, carrying 20,000 pounds of cargo from Japan to Hawaii. Our normal profile was to land and fuel at Wake Island and then proceed to Hawaii. However, during our mission timeframe, Wake Island was closed due to an ongoing exercise. Our dispatch authority scheduled us to go through Midway Island.

Midway is a National Wildlife Refuge and home to nearly three million sea birds at peak times of the year and well-known for bird strikes. My crew went through the deliberate ORM process to reduce the risk. We scheduled arrival well after sunset and during a time of year when the larger birds were not typically present. In addition, as a new pilot in the squadron and because we were unfamiliar with the airfield, I would watch the night approach into Midway from the nav seat.

We began our descent into Midway an hour or so after sunset. The crew completed the required briefs and checklists, and the approach was loaded into the Global Navigation System (GNS). Once the distant runway lights were in sight, it became apparent that there were no horizontal ambient/peripheral visual cues in the looming black hole before us.

peripheral cues, so our brains couldn't monitor the relative position of objects that reflect or illuminate light around us. When few surface lights exist between a landing aircraft and the runway, pilots are known to fly too low, and some have crashed short of the threshold. Our aircraft got momentarily lower than desired at times while on final approach due to the illusion, despite the altitude and descent rate callouts. Our assertive co-pilot didn't allow that to happen for more than a few seconds at a time.

The closer we got to the runway, the more pronounced the black-hole illusion became. Following what seemed like an eternity, the landing lights began to pick-up the edges of the island and runway to provide some visual ambient reference. Small birds were everywhere on final, zooming past the flight station left

Our visual system was not supporting our spatial orientation due to a lack of peripheral cues, so our brains couldn't monitor the relative position of objects that reflect or illuminate light around us.


Since we were OCONUS, the GNS approaches didn't provide vertical guidance. The pilot at the controls (PAC) asked the copilot to call out step-down altitudes mirroring a three degree glideslope and also to call out descent rates throughout the step-downs into the black hole.

To make the approach more interesting, there was also an unforecast 20 knot right to left gusting crosswind. The PAC would get the aircraft lined up on course, and his corrections resulted in an almost constant swinging back and forth with the ailerons as he tried to hold a centerline track. A sense of urgency started to build for the flight crew.

Flight into an area with a lack of ambient cues (e.g., overwater or near sparsely populated areas) at night causes the black-hole illusion. Our visual system was not supporting our spatial orientation due to a lack of

and right. The plane somehow passed through them unscathed as we came to a full stop.

Departing Midway, we felt humbled by the visual illusion that we do not often see in the VR community. CRM and ORM were critical skills that ensured our safety. Without the step-down and descent-rate callouts requested by the PAC, we could have either crashed into the ocean or skated over the approach end, most likely landing short of the threshold.

Looking back on this flight, I think we would have been better served to delay our arrival in Midway several hours, waiting for moonrise, which could have given the crew a better horizon with ground references. This, in turn, could have removed some of the uncertainty and tension during the approach. 

LCDR GRAHAM FLIES WITH VR-64.

Brake Dancing in the LA

BY LCDR STEPHEN LAMOURE

VAW-115 was ramping up for its 2014 Summer Patrol of the Western Pacific. As the only forward deployed E-2C Hawkeye Squadron in the Navy, the Liberty Bells have been stationed in Atsugi, Japan for the past 41 years.

This Summer Patrol was to be no different than any other. With a successful FCLP detachment complete, Liberty Bell aviators were chomping at the bit for their carrier qualifications prior to deployment.

On the second night of CQ, our squadron was looking to finish, as our most junior pilots and LSOs were last to qualify. I was the Aircraft Commander sitting in the right seat having qualified the night before. Due to our mission being CQ, a minimum crew was scheduled for the flight, with only one NFO in the back.

The NFO and I had been in the plane for almost five hours, as the pilots who were seeking qualification cycled in and out. At about 12:30 a.m., one of our last junior pilots climbed into the aircraft. He strapped in, and we taxied over to cat 1 ready for launch.

As we became airborne, we climbed to Angels 1.2, and turned downwind. This new pilot was good. He handled the E-2 with precision as we were being vectored by CATCC to final.

“602 I show you on and on, three-quarter mile, call the ball,” CATCC said on Button 15. I gave my ball call as the nugget flew his first night pass in 6 months with ease.

Once a Hawkeye traps in the wires, procedures to get out of the landing area are standardized for both the pilot and copilot. The pilot will bring the power levers

aft out of the flight range and into the ground range as the copilot raises the arresting hook and folds the wings.

Tonight was no different. As the arresting gear paid out, the aircraft was tugged aft to clear the hook from the wire. At this point, I noticed a slight audible change in the motors – this change is common as the pilot takes the power levers out of the flight range and into the ground range. In the ground range, the pilots then have the option to move the power levers aft to provide reverse thrust.

The next 30 seconds were a blur. As the aircraft finished from backing up, we were given the signal from the yellow shirt to raise the hook, fold the wings, and start taxiing forward. However, as the pilot brought the power levers out of reverse into the ground range for the forward taxi, something didn’t sound right. It sounded almost as if the pilot was moving the power levers into the flight range for takeoff.

I looked down at the power levers. The pilot had both power levers in the ground range, right where they were supposed to be.

The engine noise continued to increase, and there were no warning lights in the cockpit. I was trying to digest the situation when the pilot said, “I can’t control it.”

We started an uncontrollable spin to the left. The darkness off the port side of the LA engulfed the cockpit. I was trying to look over the nose of the aircraft to see the edge of the ship, but it had already disappeared beneath the nose. The pilot reached for the emergency brake; however, the wheels were already locked with our toe brakes. Brakes were of no use at this moment.

As we picked up speed to the left, I began to see



I was trying to look over the nose of the aircraft to see the edge of the ship, but it had already disappeared beneath the nose.

the LA again. The spin was in our favor as the port main mount was the pivot point. Thank God we weren't going over the edge yet.

I reached up to pull the right fluid cutoff handle and then the left. The "T-Handles" electrically secure fuel and hydraulics to the respective engine. As the props spun down, the aircraft went dark. We came to a rest facing back toward Catapult 1.

When the violent motion stopped, the deck crew rushed over with chocks and chains. I looked over at the pilot and took a deep breath. Our min crew NFO opened the cockpit door.

"Everything all right, guys?" he said with a grin.

That poor guy had been in the back for the ride with zero SA to the situation, only a violent spin to the left and then his tube turning dark. It reminded me how trusting our E-2 NFOs are.

In the end, we had spun just over 270 degrees

in only a few seconds. There was no damage to the aircraft or other equipment on the deck. Most importantly, no one was injured.

After the aircraft was brought down to the hangar bay for maintenance, our mechanics found that a bolt on the starboard engine power lever coordinator had come off. The result was that the engine power went to max regardless of the cockpit-selected power-lever position.

If this bolt had worked its way off seconds before or after the time that it actually had, the result could have been far worse. No matter how insignificant the part may be, lives and equipment are at stake. We operate at a high tempo and there is no room for error. We walked away from this with nothing more than an elevated heart rate and a donut burned into the landing area. 🍌

LCDR LAMOURE FLIES WITH VAW-115.

When Things Get Hot in Lemoore

BY LT JAMIE SCHROCK

It was a gorgeous Spring day in Lemoore, CA. I was the new guy in VFA-97, flying brand new lot 36 F/A-18E's. Having recently finished our transition from the F/A-18C to the F/A-18E, morale was high in the squadron. I was excited to be scheduled for a Strike Fighter Weapons Tactics Level II (Combat Wingman) Offensive Basic Fighter Maneuvers flight with our training officer. The brief was standard and thorough. We planned to make the five minute transit to the Lemoore MOA, overhead the airfield, conduct a 30-40-minute mission, and then land back at NAS Lemoore. Following the brief, we took a few minutes to collect our thoughts and then walked to the aircraft.

Pre-flight and startup were uneventful; however, I noticed that it took more power than normal to get the aircraft moving. Pulling out of the line I also noted that the brakes were spongy. I had to apply more than normal brake deflection before feeling the brakes engage. When they did engage, they would stick sharply. Taxiing to marshal, I discussed the matter with my flight lead. The problem seemed to go away en route, so we decided to take it flying. We proceeded on our mission and completed it as briefed.

Returning overhead the field, we separated, with my flight lead landing first. I touched down behind him on landing rollout with a few hundred pounds over our minimum on-deck recovery fuel; and then (following the NATOPS recommended braking procedure) I programed aft stick below 100 knots, effectively using the large horizontal stabs as speedbrakes. Unsure if I would have brakes available, I tapped the brakes two or

three times to verify they would work. They seemed to be fine, and I was able to slow to a safe taxi speed using the aerodynamic effect of the horizontal stabs. When we were slow enough to leave the runway, we exited and headed to the hot brake check area.

After coming to a stop to conduct hot-brake checks, the maintainer checked my brakes and emerged from under the aircraft giving me the "hot brakes" signal (waving his hand in front of his nose). I spoke to him afterwards, and he said that he hadn't noted abnormal temperature, but had seen smoke rising from my right main wheel mount. He decided



to take the conservative route and call it hot brakes.

The procedure in the PCL reads as follows:

If hot brakes are suspected:

1. Continue to taxi to cool brakes (if practical).
2. Do not set parking brake.
3. Chock nosewheel (do not chock main wheels).
4. Park into the wind (if practical).
5. Cool brake assembly with ground cooling fan (if available).

I decided to continue taxiing to cool the brake assembly to the point where I could return to the line. I notified ground control that I would be taxiing up Golf taxiway (a long taxiway running parallel to runway 32R) for brake cooling. I believed that the long taxi should be enough to cool down my brake assembly. I then notified my base of the situation, relaying my game plan to taxi for about 10 minutes and then return to hot brake checks to try again. A mile up the taxiway, I notified ground control,



This mishap prompted the wing safety department at NAS Lemoore to reevaluate how we deal with hot-brake situations in the Hornet community, and we anticipate new NATOPS and local procedural changes for hot brakes.

made a tight, 180-degree turn and began to taxi back toward the hot-brake area. After only a minute or two of taxiing, I noticed a slight list to the right. I attributed this to the tight U-turn I'd made on the taxiway, which sometimes compresses the main strut on the outboard main gear assembly. What I didn't know is that my right main tire was actually beginning to deflate. I quickly noticed that the list steadily increased. The ride got bumpy, and I smelled burning rubber.

Suspecting a deflated tire, I stopped the aircraft and notified base that I would require a tow back to the line. Looking back towards my right wing, I was horrified to see smoke pouring from under the wing. The next 20 seconds were a blur, as I secured the throttles, opened the canopy, released my leg garters, egressed the cockpit, and slid off the left wing to the ground below. My first look back at the aircraft, from a safe distance, revealed flames surrounding the right main gear assembly. As I looked around for help, I saw a welcome sight: fire trucks racing full speed towards my jet. Upon arrival, they extinguished the fire using foam agents and water, and a host of safety personnel arrived shortly thereafter to assess the damage and take me back to the hangar. The jet was then towed back to the hangar for further investigation.

Postflight analysis of the aircraft revealed that a faulty brake servo within the right main-gear assembly had been applying up to 400 psi of hydraulic pressure to the right brake intermittently.

Though the dragging brake on landing rollout likely caused the minor hot-brake situation, taxiing to try to cool the brakes was the bigger culprit. The brake was likely dragging during the entire taxi, further heating the assembly and ultimately leading to the fire. This mishap prompted the wing safety department at NAS Lemoore to reevaluate how we deal with hot-brake situations in the Hornet community.

High winds in Lemoore that day tamed the flames and minimized damage to the structural parts of the jet. At the end of the day, nobody was injured, the jet will fly again, and I got a new callsign: "Paul Walker Junior." 🦅

LT SCHROCK FLIES WITH VFA-97

Avoid the Urge

BY LCDR BRIAN JAMISON

Our squadron was facing an upcoming workup cycle for the next deployment, and I was pushing to get our junior pilots through their Air Combat Training Continuum (ACTC) syllabus while we still had time for unit-level training at our home airfield. As the squadron operations officer, I was acutely aware of how the loss of even one ACTC event affected the long-range plan.

The brief was thorough: it covered all the risks involved and the control measures for making sure our dual-ship, night, tactical-formation (TACFORM) and terrain-flight (TERF) event would be successful. Particular emphasis was placed on the need to take it slow, as this was the first such event for the two copilots and two of the aircrew.

The original plan called for moving to a working area and 30 minutes of TACFORM maneuvers. This would be followed by a low-level route to the NOLF, where the rest of the flight would be spent completing various TERF maneuvers and landings.

Like all good plans, ours did not survive first contact with the “enemy” (a combination of weather and unannounced field closures). Our initial transit to our first working area had gone smoothly, but the gusty wind conditions made it difficult to keep the flight within the confines of the area during our TACFORM sequence.

As the event lead, I stopped and reset the flight several times to keep us in the working area. The resets added up and kept us working through the formation maneuvers for an hour. I adjusted our low-level route to get us to the NOLF more quickly and give us enough time to focus on landings.

I briefed the updated route over the radio and assumed navigation responsibilities for the section. The area was unfamiliar to me, and I found it challenging to navigate the flight and continue to provide TERF flying instruction to my copilot. I felt behind the flight after having to reset several times due to the wind, and I was digging deep into my adaptability/flexibility reserves. However, I had a very competent crew, and we managed to make it to the NOLF.



Unfortunately, the NOLF was not available to us. As I checked-in our flight with the tower, I received a broken transmission that sounded like my request had been disapproved. Not wanting to penetrate the NOLF’s airspace without permission, I put the flight into a holding pattern. I tried again to communicate with the tower and gain entry to the field. Again, the transmission was broken, but clear enough for me to understand that my requests were denied.

The initial frustration I felt after having to adjust the formation sequence and then the low-level route now began to magnify as I realized I’d have to come up with

another change to the plan to complete the TERF landings. I thought I had covered my bases by reserving an exclusive-use period at the NOLF, but we'd ended up wasting 15 minutes. I quickly decided to take the flight to a nearby civilian field to complete the event.

I had worked at the field before, but only single ship and during the day. The flight had adjusted well to all of the previous changes, so I expected we could adjust to this one.

We got our training done at the civilian field, but it turned out to be a tremendous challenge. Another helicopter that wasn't equipped with night-vision devices (NVDs) was also using the field and had the runway lights illuminated. This "bloomed" us out every time we turned toward our landing area. I struggled to keep up with providing effective training as the bulk of my attention was directed at just trying to keep the flight safe. The same frustration I felt earlier in the flight began to gnaw at me again, making the task of providing high-quality training even more difficult.

After completing our required maneuvers, I quickly briefed our route home. It was late, and the field we were operating at and our home field were now closed. I reviewed the closed-field rules for our destination and passed them on to the rest of the flight. Although this is a minor process, the fact that we had not planned on coming home after the field closed irritated me. I felt enormous frustration that I again had to come up with a brief for the section to get the flight done. I felt like I had just spent the last three hours spinning plates, a feeling that was exacerbated because this should have been a relatively straightforward syllabus event.

I put the accumulated frustration aside and led the section back to home field. Our landing was uneventful and my co-pilot taxied us back to our line. As we approached the turnoff from the taxiway to our line, I had removed my goggles and was heads-down, working through the post-landing and shutdown checklists. My copilot kept his goggles on as we taxied away from the landing pad toward our line.

As we approached our turnoff from the taxiway, the combination of the copilot sitting cross cockpit to the turn and his lack of familiarity with the field at night created some confusion. We missed the turn and continued straight down the taxiway. As Dash 2 turned behind us, my copilot announced that he thought he had missed the turn and hit the brakes. I looked up and noticed that we had stopped on the taxiway at a point where we were immediately adjacent to our parking spot. I looked over at

our line and saw the plane captain looking at us, no doubt wondering what we were doing.


I now had several options. I could continue another 200 yards down the taxiway to the next turn and back taxi into our line, I could lift and complete a 180-degree hover turn and go back to the original turnoff, or I could turn off the taxiway and drive directly into the line.

THE CUMULATIVE EFFECT of all the flexing and changing of plans during the flight had taken a toll on me, and, as I was about to find out, had affected my decision-making. I just wanted to park the helo and wrap this event up. I was frustrated and tired, and couldn't wait to put this experience behind me. I decided to pursue the course that would get me to the line the quickest.

I looked at the line and decided to turn off the taxiway and pull into my spot. I didn't notice what lay between my line and the taxiway: 50 feet of rough surface with a low point in the middle, like a shallow ditch. I took the controls from the co-pilot. As I turned off the taxiway, I felt the aircraft drop slightly, like it had come down off a streetside curb. The aircraft accelerated on its own; it was travelling downhill. The acceleration slowed, and I heard an unpleasant scraping sound as the helo began to move up the opposite slope of the ditch. I pulled into the line and realized that I had probably scraped some antennas on the bottom of the helo.

As soon as we shut down, I jumped out and looked at the underside to assess the expected damage. Sure enough, two of the antennas that are located directly beneath the cockpit were scraped up and bent slightly aft. I pointed the damage out to a nearby airframer, and headed into maintenance control to confess and debrief.

Once all the work had been done, the total damage came out to about \$2,000. While that figure fell far short of what I feared, it was still an expensive lesson for me. I managed to complicate a decision that under normal circumstances would have been easy to make. I allowed my frustration and impatience to influence me. The flight had effectively sapped my adaptability and flexibility. The led to a loss of situational awareness and ultimately a breakdown in decision-making when it came time for what should have been the easiest part of the flight.

We've all discussed compartmentalizing and avoiding the urge to rush during a flight or mission. This incident has become a painful reminder for me about how important that is. 

LCDR JAMISON FLIES WITH HS-11.

There is a **huge temptation** to focus
on the tactical scenario at the
expense of maintaining control
of the aircraft. This temptation **needs**
to be recognized and
addressed in the
mission brief.

— See article "Out For a Dip" (page 4)

